A piston and cylinder assembly 72 is then controlled to advance the mandrel 74 on the free end of a support rod 76 into the internal cavity of the truncated conical portion C1, which was created by the multiple push point reductions to the end portion 62. The piston and cylinder assembly 72 is then operated to again advance the mandrel 74 a relatively short incremental distance controlled to seat the mandrel 74 in load bearing contact with the internal surface of the blank residing in the die 70. The piston and cylinder assembly 30 is operated to partly pull the blank through the die 70 and establish as shown in Figure 11c an elongated truncated conical length C2 terminating at a transverse plane A2 from which the transitional length J1 has emerged from the die 70 which creates a uniform decrease to the uniform wall thickness. The length of the truncated conical section C2 and J1 are established, when desired, by operation of a position sensing limit switch, not shown. The partly drawn blank is then removed from the die by first reversing the operation of the piston and cylinder assembly 72 to retract the mandrel 74 from the blank and then the blank is removed from the internal cavity of the tubular die 70 by reversing the direction of movement of the drawn end portion of the blank, as shown in Figure 11d. After the blank is passed free and clear of the die cavity, the end portion 62 of the partly drawn blank is inserted in a die 78 and advanced initially to a point where the truncated conical length C3 establishes a seated contact with and wholly resides in the die cavity. The gripper 26 of the draw carriage then engages with the end portion of the drawn blank emerging from the exit end of the die 78. This relationship of the partly drawn blank to the die cavity of contoured die 78 is illustrated in Figure 11e. The next steps in the present invention comprise a further drawing operation by operating a piston and cylinder assembly 72, as shown in Figures 11e and 11f, to advance a mandrel 82 within the internal cavity of the truncated conical end C3. The

piston and cylinder assembly 72 is then operated to again advance a mandrel 82 a relatively short incremental distance to seat the mandrel 82 in load bearing contact with the portion of the blank residing in the internal surface of the die. The gripper 26 is operated to pull a selected increment or all of the transitional length J1 through the die and establish the second constituent of length 58 ~~without producing an appreciable increase to the uniform wall thickness thereof~~. As shown in Figure 11g an elongated truncated conical length C4 commences at a plane A4 and terminates at a transverse plane A5. In the embodiment of the automotive instrument panel support beam workpiece shown in Figure 6, the drawing operation using the contoured die 78 is used to form one continuous truncated conical transition 56 between first constituent length 54 and the second constituent of length 58. Transition 56 is the aggregate of the transitions C2 and C4 occurring when the drawing operation using die 78 is continued until transitions C2 and C4 are continuous by limiting the magnitude of hydraulic pressure introduced to the piston and cylinder assembly 30. The pressure limiting function can be achieved by the use of a pressure relief valve in the fluid line delivering the hydraulic pressure to the piston and cylinder assembly. In this way, the second drawing motion is stopped part way along the blank by sensing an increase to a drawing force developed when the contour of the contoured die 78 contacts the contour developed by the preceding contoured die 70 to thereby form a continuous smooth contour tapering wall section ranging in diameters between the first constituent and the second constituent of lengths. The use of the mandrels 74 and 82 during the drawing operations form the external tapered surface free of surface markings. The wall thickness T4 along transition 56 and the wall thickness T5 along the passenger side support beam portion 58 are uniform and reduced to the desired thicknesses. The two step draw process increases the length of the tube blank 50, a

typical example is a 20 inches overall increase in length using a starting metal tube blank with a length of 48.5 inches.